



Less Is More: A Case for Concentrated Portfolios

With the rise of the Modern Portfolio Theory, for more than five decades diversification has been inherent to portfolio construction. However, this trend has evolved into what may be deemed over-diversification—where securities are included in a portfolio to dampen volatility rather than because of fundamental stock picking. We believe the inclusion of a security in a portfolio should be driven by high conviction in the underlying investment idea. In our view, concentrated portfolios benefit from the intuitive conclusion that they are more likely to include companies representative of a manager's top ideas. In this paper, the Lazard US Equity Concentrated team examines empirical evidence found in academic studies in support of concentrated portfolios' outperformance. The team also discusses its portfolio construction approach where a stock's cash flow uniqueness—in itself and relative to the rest of the portfolio—drives the decision for consideration in the strategy.

“Wide diversification is only required when investors do not understand what they are doing.”

– Warren Buffett

Many famous investors such as Warren Buffett, George Soros, Bill Ackman, and Martin Whitman have created wealth through employing concentrated strategies. Yet, such a technique is contradictory to Modern Portfolio Theory (MPT), which stresses diversification as a risk-reducer. Due to the popularity of the MPT by many in the investment community, there is a widely held belief that diversification is the key to successful investing. However, we feel that the goal of diversification is often taken to extremes and, at times, some managers have exchanged traditional risk control for returns. We believe that many investors would be better served by using more concentrated portfolios, which allow portfolio managers to invest only in their best ideas and focus on stock picking. While it is sometimes difficult to identify concentrated managers as they do not exist in a defined universe and as the number of investments in their portfolios vary by opportunity set and manager—what identifies a concentrated portfolio is that stock selection is based on the manager’s level of conviction, not just for portfolio diversification.

Evidence from Empirical Studies

One case against the traditional idea of diversification is made in a working paper, *Diversification versus Concentration ...and the Winner is?* (Yeung et al. 2012). In this paper, the authors highlight the finding that there is a trade-off between diversification and returns. The study argues that fund managers often fail to leverage their own stock-picking skills when constructing diversified portfolios. To make this claim, the authors examined over 4,700 diversified US equity mutual funds (defined by the authors as mutual funds with 30 or more stocks) with different styles, asset levels, and client bases. Using quarterly data from 1999 to 2009, the authors created concentrated portfolios by measuring the active weights of each diversified mutual fund, and then sorting the active weights from largest to smallest. Concentrated portfolios were then built by using the largest active weights, which the authors interpreted as the fund manager’s highest conviction stocks. The concentrated portfolios ranged from five stocks (top 5 active weights) to 30 stocks (top 30 active weights) and the position sizes were then equal and conviction weighted. The results of the conviction-weighted method, in which more weight was attributed to larger active weights, are displayed in Exhibit 1. The findings show that the absolute returns from the concentrated portfolios outperformed the diversified funds from which they were derived as well as their corresponding benchmarks. Additionally, the performance of the concentrated funds improved as they became more concentrated.

The exhibit also displays that while the standard deviation (a measure of the dispersion of returns which is generally used as an estimate of risk) of the concentrated portfolios increased as the number of holdings declined, so did the corresponding Sharpe ratio (the excess return over the risk-free rate per unit of standard deviation), meaning inves-

tors would receive increasingly more return per unit of additional risk taken by investing in a more concentrated portfolio. Another interesting takeaway is that while standard deviation increased as the portfolios became more concentrated, at the 25 to 30 holdings range the standard deviations remained very close to that of the diversified portfolio.

Next, the authors measured the excess returns, historical tracking error (which measures the standard deviation of excess returns), and information ratio (a metric which is computed by dividing excess returns by tracking error, and which measures the historical consistency with which a strategy exceeds its benchmark) of the concentrated portfolios relative to the actual diversified funds they represented and to their corresponding benchmarks.

Exhibit 2 displays that excess return, tracking error, and information ratio all increased the more concentrated a portfolio became. These findings suggest that many managers have good stock-selection skills as their top ideas tend to outperform, and with more consistency than

Exhibit 1
Concentrated Portfolios Outperform the Diversified Portfolios from Which They Were Derived

Portfolios	Total Returns (Annualized; %)	Standard Deviation (Annualized; %)	Sharpe Ratio
Top 5	10.77	26.33	0.277
Top 10	9.39	23.40	0.255
Top 15	8.67	21.83	0.239
Top 20	8.12	20.65	0.228
Top 25	7.78	19.79	0.219
Top 30	7.44	19.13	0.210
All Funds	6.30	19.51	0.169
Own Index	5.05	19.96	0.080

For the period 1999 to 2009

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Source: Yeung et al. (2012)

Exhibit 2
Risk-Adjusted Metrics for Concentrated Portfolios

Concentrated Portfolios	Relative to Own Fund			Relative to Own Index		
	Excess Return (%; p.a.)	Tracking Error (%; p.a.)	Information Ratio	Excess Return (%; p.a.)	Tracking Error (%; p.a.)	Information Ratio
Top 5	3.75	16.49	0.23	5.26	17.68	0.30
Top 10	2.41	12.94	0.19	3.90	14.06	0.28
Top 15	1.69	11.00	0.15	3.16	12.12	0.26
Top 20	1.17	9.62	0.12	2.67	10.68	0.25
Top 25	0.83	8.69	0.10	2.30	9.69	0.24
Top 30	0.52	8.04	0.07	1.97	9.00	0.22

For the period 1999 to 2009

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Source: Yeung et al. (2012)

more diversified portfolios as evidenced by the higher information ratios. The study contained samples from value, growth, and style-neutral funds, which is important as the authors wanted to evaluate whether their results were skewed by style. However, the results revealed that concentrated portfolios delivered favorable risk-adjusted performance across all styles as well as style-neutral funds.

The study also concludes that by attempting to diversify holdings and perhaps move toward ideas which are not the portfolio manager's top picks, performance suffers. According to the authors, "These findings are basically good news for the professional managers who have long been criticised for their performance. The evidence suggests that they are actually good at what they spend most of their time doing, selecting stocks. The problem is that they are stripped of this edge due to having to depart from their stock preferences in the interests of diversification and risk-control. This is not to downplay the importance for investors of running a diversified portfolio across all of its investments but it does question the current practice of requiring a high degree of diversification of individual managers." In our view, since portfolio managers may be penalized for exposing investors to idiosyncratic risk, the desire for diversification among many investors and the investment community may cause managers to hold some stocks not because they will likely increase returns, but simply because these stocks are perceived to reduce overall portfolio volatility.

In another study, *Best Ideas*, the authors Cohen, Polk, and Silli (2010) conducted a similar exercise. In this analysis, which used data from 1984 through 2007, the authors utilized different methods¹ to identify the best ideas in US equity mutual funds, and then evaluated the performance of these top ideas. The authors found that portfolios' best ideas "not only generate[d] statistically and economically significant risk-adjusted returns over time but they also systematically outperform[ed] the rest of the positions in managers' portfolios." Outperformance of best ideas was found across benchmarks, risk models, and best idea definitions. While the amount of outperformance varied by best idea definition, the primary tests revealed outperformance ranging from 1.2% to 2.6% each quarter. The analysis also suggested that the outperformance of concentrated strategies is sustainable, as outperformance did not typically mean-revert over the subsequent year. According to the authors, "We show that under realistic assumptions (e.g., investors put only a modest fraction of their assets into a particular managed fund), investors can gain substantially if managers choose less-diversified portfolios that tilt more towards their best ideas."

Similar to the study by Yeung, et al., the authors also argue that the largely reported poor performance of the mutual fund universe is not due to stock-selection skills, but rather institutional factors which encourage managers to overdiversify in order to avoid idiosyncratic risk. The authors argue, "Though of course managers are risk averse, investors appear to judge funds irrationally by measures such as Sharpe ratio or Morningstar rating. Both of these measures penalize idiosyncratic volatility, which is not truly appropriate in a portfolio context."

Another interesting finding in the study is that over the 24-year review period, almost 62% of best ideas were only considered as such by one manager at a time. Fewer than 18% of best ideas were held by two managers at a time, and a best idea was in more than five funds less

Exhibit 3
Concentrated Managers (Those with 30 or Fewer Holdings) Have Outperformed Diversified Managers over the Last 15 Years



For the 15 years ended December 2014

Data are based on the eVestment US All Cap, Large Cap, Mid Cap, Small-Mid Cap, and Small Cap Equity universes, composed of 223 concentrated strategies and 2,029 diversified strategies with a reported number of holdings, as reported on 10 February 2015. US Concentrated managers are those strategies with 30 or fewer holdings as of the reporting date, while diversified managers are those with more than 30 holdings. Past performance is not a reliable indicator of future results. This information is for illustrative purposes only and does not represent any product or strategy managed by Lazard.

Source: eVestment, Lazard

than 7% of the time, suggesting that, in general, views regarding a stock as a best idea are largely independent across managers. This finding argues against the efficient market hypothesis, as varied style- and market cap-focused managers were able to exploit different types of best ideas.

While not as sophisticated as the analysis described thus far, we conducted a study in which we were able to confirm the outperformance of more concentrated institutional mandates by examining separate account data in eVestment. We grouped actively managed strategies in the US Large Cap Core universe into concentrated strategies (which we defined as those with 30 holdings or less) and diversified strategies (which we defined as those with greater than 30 holdings). We then measured the average 3-year and 5-year rolling returns of the concentrated and diversified manager groups, as well as the S&P 500 Index over the last 15 years. We found that concentrated managers outperformed both diversified managers and the index, as shown in Exhibit 3.

To extend beyond US-based investments, we conducted the same test on the Global and EAFE Large Cap Core universes. Due to data availability, we could only conduct such tests over the last 10 years. In these instances, we defined concentrated managers as those with less than 50 holdings due to the larger opportunity sets. We found extremely similar results in these tests, with concentrated managers outperforming diversified managers as well as the corresponding indices.

Active Share

Another argument for more concentrated portfolios is the concept of active share as a metric for active management. In a paper published in 2009 by Martijn Cremers and Antti Petajisto, then of the Yale School of Management, the concept of active share, which measures the

percent of a portfolio’s holdings that differ from its benchmark, was introduced. From their analysis, the authors concluded that active share is a better measure of active management than tracking error alone, as well as a better indicator of future outperformance. According to the study, as active share measures differentiation from the benchmark, it is a proxy for stock selection. Tracking error, on the other hand, measures the volatility of portfolio returns in excess of the benchmark, and thus is a proxy for systemic factor risk. Active share ranges from 0% (a pure index fund) to 100% (fully active and completely different than the benchmark). The study considers a US manager with an active share of 60% or greater as truly active, and concludes that managers with high active share have historically outperformed.

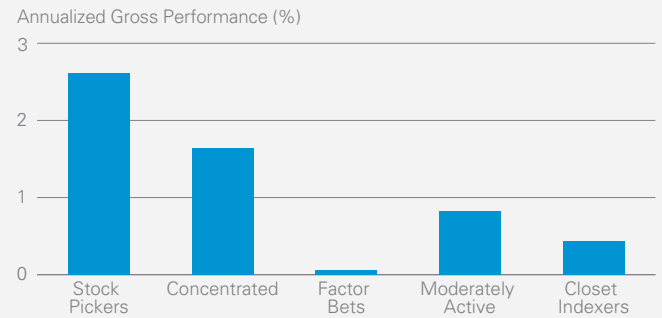
As reported in Petajisto’s 2013 update, *Active Share and Mutual Fund Performance*, Exhibit 4 shows the relative performance of US all-equity funds from 1990 to 2009, segmented by five assigned active share and tracking error categories defined by the authors. One should note that in this context the “Concentrated” category does not imply a small number of holdings as thought of commonly, but rather this definition is for portfolios that combine high active share and high tracking error. In the common use definition of concentrated portfolios, which we consider both the Stock Pickers and Concentrated categories, the results reflect strong outperformance for high active share portfolios. It is also important to realize that concentrated portfolios engender high active share because they hold a limited number of ideas and therefore only have a small overlap with an index.

High active share portfolios outperform across market caps and the performance of these funds held up well through the financial crisis. As noted by the author, “I found that the most active stock pickers have been able to add value to their investors, beating their benchmark indices by about 1.26% per year after all fees and expenses. Factor bets have destroyed value after fees. Closet indexers have essentially just matched their benchmark index performance before fees, which has produced consistent underperformance after fees. The results are simi-

lar during the 2008–09 financial crisis, and they also hold separately within large-cap and small-cap funds.”

Another key argument in the paper is that the “average” active manager appears to underperform because of the inclusion of closet indexers in typical sample sets. Closet indexers, in our opinion the perfect example of over-diversifiers, typically maintain positions that overlap closely with the benchmark to ensure that their performance does not deviate significantly from the index, while many times claiming to be active managers. We believe closet indexers may prove to be significantly expensive managers, as their strategies are unlikely to provide meaningful outperformance, particularly net of fees. It is also noted in the study that the amount of assets managed by closet index-

Exhibit 4
Portfolios with Higher Active Share Tend to Outperform



For the period 1990 to 2009

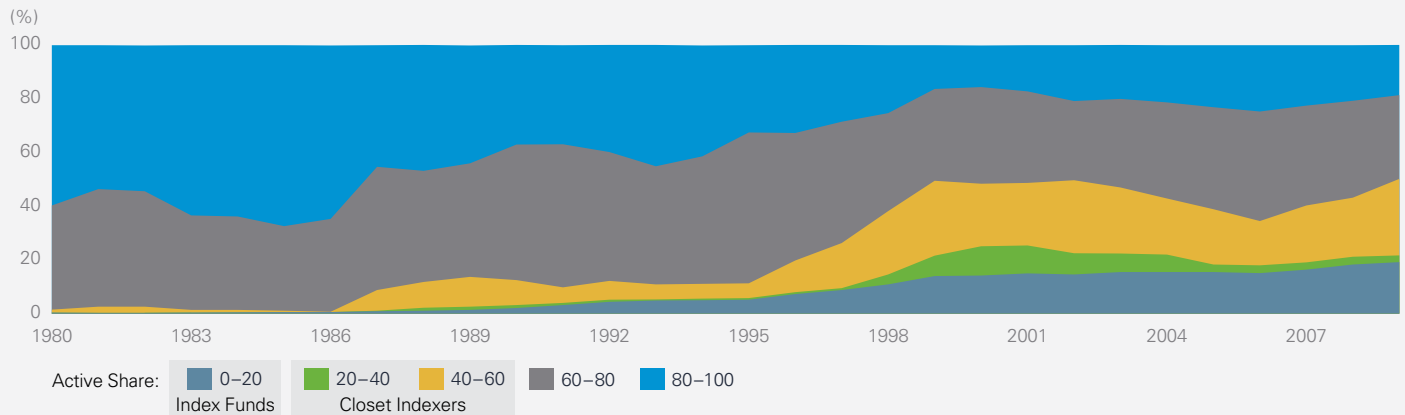
Stock Pickers = High Active Share, Low to Moderate Tracking Error; **Concentrated** = High Active Share, High Tracking Error; **Factor Bets** = Low to Moderate Active Share, High Tracking Error; **Moderately Active** = Medium to Moderate Active Share, Low to Moderate Tracking Error; **Closet Indexers** = Low Active Share, Low to Moderate Tracking Error

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Source: Petajisto (2013)

Exhibit 5
Rise in Closet Indexing

Fraction of Assets in US All-Equity Mutual Funds by Active Share Category



For the period 1980 to 2009

Source: Petajisto (2013)

ers exploded in the mid-1990s. In 2009, these managers represented about a third of the total assets, an increase from approximately 1% in 1980, as illustrated in Exhibit 5. The rise of closet indexers and their classification as active managers helps to explain the common perception that most active managers tend to underperform.

How Many Stocks Make a Diversified Portfolio?

We have discussed various studies that examine the outperformance of concentrated managers; yet, some observers may continue to believe that a portfolio with a concentrated number of holdings is too risky. However, it should be noted that most diversification benefits are realized after relatively few securities are added to a portfolio. As such, the practice of adding too many securities for diversification purposes

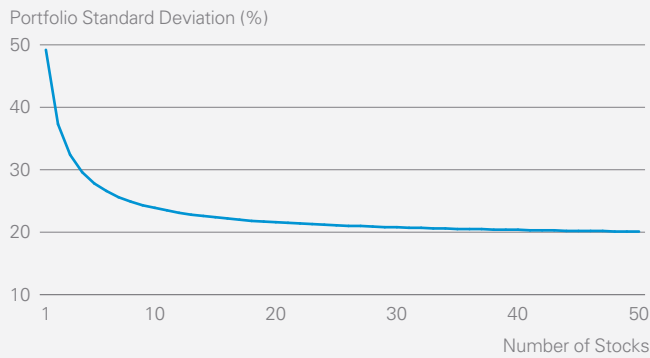
leads to marginal risk-reduction results. We can reconcile this assertion with the results in Exhibit 1, where the standard deviation of the 30-stock portfolios is very close to that of the diversified funds.

In Exhibit 6 the standard deviation pattern of a hypothetical equal-weighted portfolio is displayed. As illustrated in the exhibit, the steepest drop in risk reduction occurs before the addition of the tenth security. The curve flattens thereafter showing a slower rate of reduction in total portfolio risk as additional stocks are added. In Elton and Gruber's book *Modern Portfolio Theory and Investment Analysis*, the authors concluded that the average standard deviation of a portfolio of one stock was 49.2%, and that increasing the number of stocks in the portfolio to 1,000 could reduce its standard deviation to a limit of 19.2%. They also concluded that with a portfolio of 20 stocks the risk was reduced to approximately 20%. Therefore, while the first 20 stocks reduced the portfolio's risk by 29.2 percentage points, the additional stocks between 20 and 1,000 only reduced the portfolio's risk by about 0.8 percentage points. We display an approximation of these results in Exhibit 6 as we feel that many investors do not realize how few securities are actually needed to realize the benefits of diversification (via standard deviation).

Our Approach – Combining Diversified Cash Flows

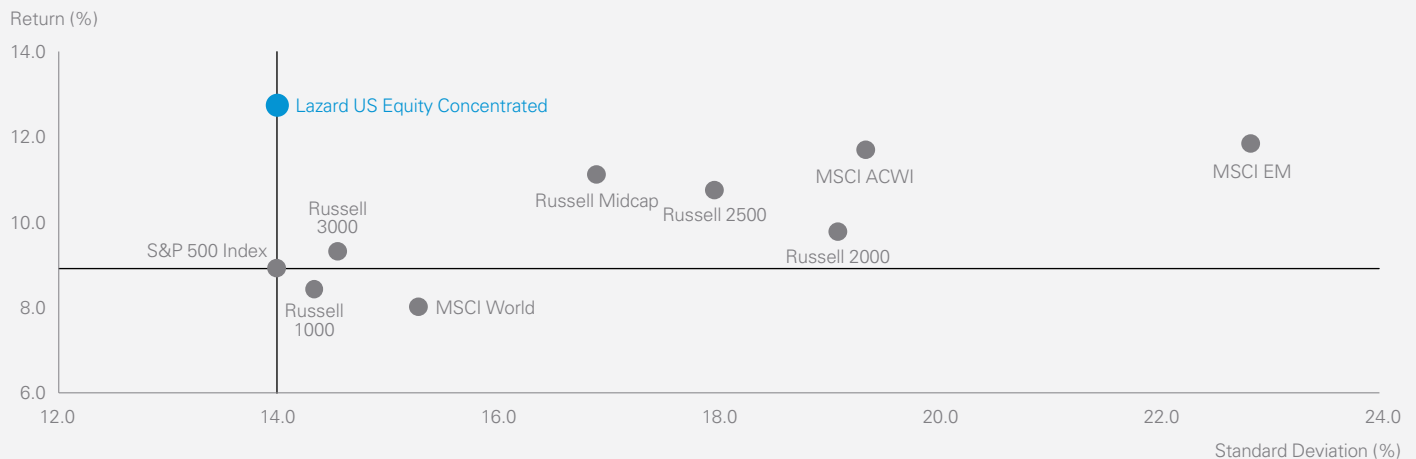
While we admit that concentrated portfolios will generally show more volatility than diversified portfolios, we believe that there are other ways to introduce diversification into a portfolio rather than simply holding more securities. For example, in the Lazard US Equity Concentrated strategy, one of the main tenets of the portfolio construction process is blending diversified cash flow streams. By this, we mean that we seek to invest in approximately 20 companies that each have different business operations and objectives. We do not just combine the top ideas of our analysts, but the best *combination* of ideas

Exhibit 6
Risk Reduction Rate Slows with More Stocks



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Exhibit 7
Lazard US Equity Concentrated Has Posted Favorable Risk-Adjusted Results



For the period 1 August 2003 to 31 December 2014. Inception date of Lazard US Equity Concentrated is 1 August 2003.

This information is for illustrative purposes only and is supplemental to the full composite performance and disclosure information. Please refer to the Important Information section for a brief description of this composite. Performance is preliminary and gross of fees. Performance is derived from a portfolio that represents the proposed investment for a fully discretionary account. Past performance is not a reliable indicator of future results.

Source: Lazard, Russell Investments, Standard & Poor's, MSCI

from a risk perspective. We arrive at what we believe to be the optimal combination of stocks by understanding the revenue, earnings, cash flow, and balance sheet contribution of each individual company. We also consider how each company will interact with every other name in the strategy, as well as how it will affect the financial productivity (return on equity, free cash flow yield), valuation, and leverage of the strategy as a whole.

An offshoot of this process is that we typically do not invest in diversified businesses such as financials (particularly, investment, commercial, or regional banks) or diversified industrials, as the business models of the companies are diversified within themselves. We believe our process helps ensure that the strategy is not focused on any one theme or factor. In our view, diversifying cash flows in a concentrated mandate is especially important as it can help mitigate much of the risk inherent in a concentrated portfolio. For example, as displayed in Exhibit 7 (on the previous page), we have found that not only has the Lazard US Equity Concentrated strategy outperformed most major developed-market indices over time, it has also provided lower levels of volatility.

By design, concentrated strategies facilitate investing in the highest-conviction ideas and therefore limit overlap with an index—leading to high active share, which in turn, is linked to potential outperformance. In our view, both theory and evidence support the notion that concentrated portfolios are well-positioned to generate alpha. We feel that by adding a concentrated strategy investors will capture the returns of the foremost investment ideas without diluting performance with over-diversification. In conclusion, we believe investors should focus on concentrated portfolios, where fundamental analysis shines.

About the Lazard US Equity Concentrated Team

The US Equity Concentrated team's investment philosophy is based on value creation through the process of bottom-up stock selection. This philosophy is implemented by assessing the relationship between valuation and financial productivity for an individual security. The team views themselves as company owners, and seeks diversification through blending businesses' independent cash flow streams.

Christopher Blake and Martin Flood are responsible for Lazard US Equity Concentrated, which is an all-cap strategy of 15 to 35 companies designed to leverage the best collection of ideas from Lazard's US Equity team. Lazard's dedicated US investment team includes 24 investment professionals who average 18 years of industry experience and 12 years of experience with the firm. Of these team members, 16 have been with the firm since at least 2003, offering a consistent set of resources.

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Notes

- 1 The authors identified best ideas as those stocks with highest estimated Capital Asset Pricing Model (CAPM) alpha relative to the market and to the manager's own portfolio.

Important Information

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The composite represents the returns of all fully discretionary, fee-paying, portfolios with a US Equity Concentrated investment mandate. The Lazard US Equity Concentrated strategy is a concentrated, all cap strategy designed to leverage the best ideas of the US Equity team. The strategy invests in financially productive companies across the market capitalization spectrum (generally greater than \$350 million), employing intensive fundamental analysis and accounting validation to identify investment opportunities.

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